Q U A N T A

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SILVER JUBILEE YEAR

Volume 26. Issue 5
Oct/Nov 2009

Information on the Association

Membership of QUANTA, the independent QL user group, is by annual subscription. The Membership Secretary can supply full details. Copies of the association's constitution & annual accounts are available from the Secretary. There is an extensive software library. There are active national subgroups. Details are given in the Member's Guide and in this magazine.

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QUANTA Magazine

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5TH DECEMBER 2009

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EDITORIAL   John Gilpin

Well, here we are again with the penultimate issue of our Silver Jubilee Volume of QUANTA Magazine. Having just got home from a week-long stay in Scotland - by the banks of Loch Tay, in Kenmore, Perth & Kinross - I now have time to reflect on seven days of mixed weather which was more than compensated for by the beautiful Autumn colours distributed throughout the glens and along the mountain ranges. How can we hope to generate a palette of colours for the QL, or any other computer for that matter, as beautiful and as varied as that provided for us by our natural countryside?

Although I took my trusty lap-top with me, I confess that it didn't even leave its case while we took time out to enjoy our surroundings, good food and re-charge our batteries, so to speak. So back home once more and as I let my fingers do the typing (I'm not sure that fingers - plural - is altogether accurate though) I look out of my lounge window and, in the dappled sunlight provided by the surrounding trees, I can see the leaves falling in ever increasing numbers and realise that the first decade of the twenty-first century has almost passed us by. Another ten years of QLing in all its various forms and, having looked back, QUANTA is now ready to look forward to the next ten years.

With this in mind, QUANTA has asked John Southern (author of the 2004 QUANTA Survey) to write another survey in order that we may be aware of our member's QL needs during the coming decade. Although this survey is well advanced, John would like to ask existing QLers for their input into the question base and it is hoped that it will available for the December 2009/January 2010 issue of QUANTA Magazine. It is also hoped that the survey will be available via our updated Web Site which is planned for completion by Christmas 2009. When it appears, all we ask is that you spend a few minutes in letting your views be known by filling it in and sending it back to us. That way, we will have a little more information to enable us to provide our members (and maybe other QLers as well) with the services that they expect from their major user's publication.

As you are probably already aware, I have to stand down from the QUANTA Committee in April having completed more than six years in office and more than three years as an officer (Treasurer). This means that QUANTA will be searching for my replacement in time for the A.G.M. in April 2010. Do you know a QUANTA Member who would be both capable and willing to take on the posts that I will be vacating? If so, use the enclosed nomination form and return it to QUANTA Secretary (Alison Southern) by the stipulated date.

Finally, I would like to share with you all the great pleasure that I have had during my term of office on the QUANTA Committee and thank you, one and

all, for your support in the posts that I have had the honour to perform. Please don't let the work that I have done go to waste. Use it to build upon for the benefit of QUANTA and its members, and support my fellow committee members as they continue to work on your behalf.

Best Wishes for the next decade,

John Gilpin. (temporary QUANTA Magazine Editor).

CHAIRMAN'S NOTES   Sarah Gilpin

The Committee have agreed a small contribution to the "QL and Mac is 25" event organised by Urs Koenig in Switzerland in October. Dilwyn Jones will be there representing QUANTA. We look forward to reports on the event in the next issue of the magazine.

What a difference a Day Makes!

Since the last issue of QUANTA Magazine the committee have been busy getting to grips with the working of the Content Management System, Typo3. Individually we have been putting together our ideas for the content and menu for the improved Web site. Early in October all the Committee met to finalise the menu and start creating content.

It was an afternoon of brainstorming ideas and training from Keith Dunbar on how we input content. Everyone had thoughts on the content but John and Dilwyn had gone as far as printing out their layout proposals. This was most useful as it enabled us to look at suggestions and alter them as we went through the afternoon. Keith kept up to date with the changes suggested, whether on titles for sections and pages or on position in the menu. Working on a total of 5 machines everyone was able to learn how to generate pages and put in content. Dan Abbott felt much happier with the system by the end of the afternoon. Both Dan and Dilwyn felt that the system was sufficiently different from those they used at work that cross-over errors were unlikely.

By 6.00 pm when the meeting closed firm decisions had been made regarding layout and expected content. There will be sections which are available to members only and John will sort out initial log-ins etc for members. There will be a section for the Traders that will enable them to insert their own adverts and news items whenever these change. Another section will be for the sub-groups and Keith will be contacting each group through their nominated contact with further details and instructions.

This is a major step forward to a more pro-active web site for QUANTA. The Committee are going to work on content through October on

the test site, while Dan and Keith work on house style and layout. It is anticipated that all sections will be made live before the end of 2009 but we will take that step earlier if possible.

I am aware that this project has been a long time in the pipeline but there has been significant progress made in the last few months. We have shown what a difference a day makes as we move QUANTA into the 21st. Century.
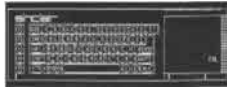
The email version of the magazine has now been running for a year. Most people still prefer a paper copy but the number of email requests has risen slowly. This last month John Gilpin, the magazine's temporary editor, sent some sample copies out with an increased file size and improved quality of photographs (in colour). These images would be further improved if contributors would send them to the editor at 600 dpi and not at 72 or 96 dpi, please.

QUANTA COMMITTEE PRÉCIS   Alison Southern

In September the Committee had an e-mail meeting to discuss a request for support for the "QL and Mac are 25" show in Verkehrshaus, Lucerne, Switzerland, on October 31st-November 1st. Urs König asked if a Quanta presence would be at all possible. After some discussion it was decided that a donation of £200, taken from the surplus allocated to pay for the "QL is 25" show at the Allesley Hotel, Coventry in April this year, should be sent as a donation and that Dilwyn Jones should go to represent the committee at the event. Dilwyn had offered to pay his own travel as he was already planning a trip to Switzerland, but the committee felt that he should be reimbursed for his trouble so it was agreed that he should use what was needed from the £200 for his travel and give the remainder to Urs at the event.

A meeting at Urmston Lane to discuss the new website was arranged for Sunday October 4th . Having previously decided to use Typo3 as the Content Management System for the website the committee met and, under direction from Keith Dunbar, constructed a number of pages for the site and agreed on the format of others. Committee members were instructed to finish their sections over the course of the next few weeks so that the new website could be up and running as soon as possible. With all the committee being able to add content to the site it is hoped that we will be able to keep this site more up to date than was possible with the old site. Traders and Sub Groups should also be able to maintain their own sections in the future.

QL Today Subscription

We are approaching Volume 14 of QL Today. J-M-S is happy to continue, and Bruce Nicholls of Quo Vadis Design will take care of the UK delivery. You can subscribe by using this form (or a copy of it), or subscribe online via www.QLToday.com (the form can be downloaded), by email, letter, fax etc. ... we are very flexible! The first issue of Volume is being prepared already and will be ready for you middle of September ... the cover can be seen on the other sheet!!

☐ I hereby subscribe to **QL *Today*** for 4 issues of Volume 14. **The total price for all four issues** is as follows, including postage and packing (depending on destination and time of renewal ... early renewals get a discount!)

Destination	price
Germany, Netherlands & United Kingdom	**EUR 29.90**
Rest of Europe	**EUR 31.90**
Rest of World (airmail)	**EUR 42.90**

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or Fax to +49 203 501517 or scan & Email to SMSQ@J−M−S.com

Back-issues of all Volumes of QL Today are also available. If you search for a specific issue, please let us know. If we do not have it, we will re-print it for you. If you want more back-issues, the per-issue price goes down as the postage plays a major part in the pricing. Even German back-issues are still available (from the first years of QL Today).

QUANTA Magazine
ANNUAL GENERAL MEETING 2010
NOTICE NO. 2

The A.G.M. of QUANTA will soon be upon us again. Nominations are invited for the posts of Chairman, Secretary and Treasurer, together with up to 6 ordinary members of the Committee. John Gilpin, our current Treasurer has completed over three years as Treasurer and over six years on the Committee and must therefore stand down under the constitution.(See Clause 5.2). Since our current Chairman and Secretary have only been in post for one year, if they wish to continue in these posts, they will be re-elected unopposed. (See Constitution Clause 5.3)

As normal the posts of Librarian, Magazine Editor, Web Master and Web Administrator will be drawn from the Committee.

The post of Membership Secretary is now combined with that of Treasurer, and that of Software editor is combined with Librarian.

I would like to remind you of the clauses of the Constitution that refer to the Election of Committee Members, Nominations for Committee Posts, and Special Resolutions:-

5.1   Any member seeking election to the Committee shall declare any commercial interest that he or his employer has in the activities of QUANTA or its members.

8.3   All nominations for Committee posts and any proposition to be put at an Annual General Meeting other than the Ordinary Business stated in 8.1 shall be signed by the intending proposer and seconder and sent to the Secretary and be received before 1st February in each year so that it can be circulated with the notice convening the meeting. (All proposers, seconders and nominees shall be members of QUANTA at the time of the nomination.)

8.4   Any proposition to change the Constitution shall be by Special Resolution. A Special Resolution requires to be sent with the notice convening a General Meeting giving twenty-one days notice and requiring a two-thirds majority of those voting.

Necessary qualifications for the Committee are basically plenty of time and lots of energy.

Alison Southern   QUANTA Secretary.

5th October 2009

QUANTA NEWS   Dilwyn Jones

Solent Sub-Group News

Graham Evans reports that the Solent QUANTA sub-group has changed its meeting dates. They now meet on the second Saturday of the month, at Botley Market Hall.

Zip Manager News

I've added an update to my Zip Manager program to the Archiver's page on my website.

Version 1.06 of this program fixes a bug in the Delete command, which sometimes got confused between '.' and '_' filename extension separators.

It's available to download free from

http://www.dilwyn.me.uk/arch/index.html

The Zip Manager program.

Miracle Midi Software

For anyone who acquires a Miracle MIDI (Musical Instrument Digital Interface) interface for the QL without the software disk (a program called Tracker by Dan Gaffey), it can now be downloaded from the Misc Software page on my website. Note that the software can only be used with the Miracle MIDI interface, it cannot be used with any other interface. I am grateful to Derek Stewart for locating a copy of the software for me.

http://www.dilwyn.me.uk/misc/index.html

A more general purpose free MIDI software package for a QL is of course Al Boehm's Midi Player 2 package, available from:

http://www.dilwyn.me.uk/sound/index.html

and if you'd like to learn some more about MIDI on the QL, go back to QL World's October 86 (page 12 - article by Mark Jenkins) and November 86 (page 18 - article by Robert Penfold on building a QL MIDI interface). A review of this very rare MIDI interface and its software was published in QL World February 1989 on page 26.

The Miracle Systems MIDI interface for the QL

Lear PCB Cad

Lear PCB Cad - the latest version is v6.67, which further improves compatibility with older QDOS systems, in common with many of the changes in recent versions. Malcolm Lear's program is available from:

http://www.dilwyn.me.uk/graphics/index.html

Here's a list of changes in recent versions, taken from the revisions.txt file included with the package.

Version 6.65.

Layer names can now be changed. Dark white which was displayed as mid grey now changed to light grey and dark black which displayed as black now changed to dark grey. File access tests using DEVICE_STATUS changed to be compatible with older QL systems.

Version 6.66.

G90 and G70 commands added to Gerber files. Gerber output variables Xo and Yo set to run OK on early QL systems. Changes made to cope with odd QDOS behaviour when deallocating memory. GerberX export now works with early QL's.

Version 6.67.

Layer and element export select menu updated. Load file screen limits fixed for low resolution QL. This has been a problem since version 6.63 caused by the extended filename length.

QL & Mac Are 25 Event

Urs König has updated his web pages for this event, taking place in Lucerne, Switzerland on Saturday and Sunday 31st October and 1st November 2009, at the Verkehrshaus Swiss Transport Museum.

Urs has lined up a number of presentations for the event, with some guest speakers, an exhibition, traders' area and an official 25th anniversary dinner event on the Saturday night.

As far as we know, apart from QUANTA's "QL Is 25" event earlier this year, this is the only major event to celebrate 25 years of QLing.

Further information can be found on Urs's website (in English) at:

which also includes links to local websites such as those of the Transport Museum itself, Lucerne tourism websites (including finding a place to stay) and some videos you can watch.

The Verkehrshaus Swiss Transport Museum

QUANTA is proud to be a sponsor of this event, and will be represented there by Dilwyn Jones.

QL Software Database

Rich Mellor writes:

We have been busy this summer trying to save as many commercial QL titles as possible to ensure the continued future of the QL.

We have managed to get most of the software from Microdrive onto a PC in a format for use with Q-emuLator in the main, although it does help us to make fresh working copies on Microdrive and disks. The idea behind this, is to ensure those users who have an original copy, but cannot get it to load anymore, will be able to purchase a working copy on disk or Microdrive, or for use with Q-emuLator from our website (provided that they can prove ownership of the original program).

As part of this work, we are also updating the QL Wiki to include more information on the software, hardware, books and traders that have been around since 1984. We would welcome more input into the traders and

personalities section in particular if anyone knows the history of any of the software and development houses (however short lived!).

The QL Wiki appears at:

http://www.rwapadventures.com/ql_wiki

Lots of work to do in updating the software details, but we hope that this will address one of the main issues when people talk about the Sinclair QL - namely they are uncertain what software was produced for it!!

Pengi Re-Released By RWAP

Due to popular demand, and with the consent of Jochen Merz, we are pleased to announce that we have re-released an old QL arcade game, Pengi, which was written by Jochen Merz and previously released on the Gigasoft label. In this colourful game, you control a small Penguin (Pengi) as he tries to survive the antarctic climate. Faced with deadly snobees all around, the only way to survive is by pushing ice blocks onto the snobees and squashing them, before they touch Pengi. You can also collect diamonds to gain additional points. Now available to buy once again, this increases the range of arcade games still available commercially from RWAP Software:

http://www.rwapsoftware.co.uk/games.html

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A screen from QL Pengi

Sprite Library Package

Further to the new Eddicon GD2 Sprite Editor package by Duncan Neithercut announced in the last issue of QUANTA magazine, the author has now released a second and complementary package.

The Sprite Library package is a program to concatenate a list of sprites into a single library file that can be loaded by LRESPR or linked into a Qliberated program using the REMark $$asmb directive. The addresses of the sprites in the library may be accessed through a single keyword that is part of the library file. This makes it straightforward to add multiple high colour sprites to Qliberated programs. Eddicon uses this system for its mode 64 icons although the sprite library maker program will work with sprites of any mode and a mixture of modes in a single file.

Both packages may be downloaded from my website at:

http://www.dilwyn.me.uk/sprites/index.html

Digital C Sources

Following on from the free release of Digital C SE announced in the last issue, the author Gerry Jackson has now also released the sources for anyone interested in studying them or re-compiling the C package.

The source files for the Digital C SE compiler system are now available from the Languages page on my website.

Ready for you middle of
December!!

The "Tebby Files" Part II

All the details about what happened
25 years ago at Sinclair
- revealed by Tony Tebby!
Extremely interesting! Hair-raising!
Frustrating! Amazing!

Well, a bit of everything!
Once you start reading, you can't stop!

... and issue 1 with the first part is still available, of
course. If you subscribe now, you will start with issue
1 ... which will be shipped as soon as you subscribe!
Please use subscription form somewhere in this issue!

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Once you have downloaded it, please read the README.HTML file it contains.

http://www.dilwyn.me.uk/language/index.html

NET-PEEK and GWDISS

George Gwilt writes:

I have put on my site:

http://web.ukonline.co.uk/george.gwilt/

amended versions of NET_PEEK and GWDISS. The amendments correct the disassembly by GWDISS of some ColdFire instructions and add the disassembly of all ColdFire instructions to NET_PEEK. Without this change the previous version, 3.39, of NET_PEEK could crash while disassembling.

Personal Computer World

Personal Computer World magazine

QUANTA Magazine

Y ou will recall that some months ago (issue cover dated April 2009) Personal Computer World magazine ran a feature on the QL, including an article where QL hardware designer David Karlin spoke about his time at Sinclair developing the QL.

Sad news followed that the magazine was in fact closing down at the end of August. Urs König announced in the ql-users mailing list:

Sad news for connoisseurs of UK's computing press. After 31 years Personal Computer World (PCW) magazine had to close this summer. The last issue was August 2009. The last words from the editor, Kelvyn Taylor: "I'm sorry to report that PCW has recently been closed down after 31 years of continuous publication, due to economic difficulties. All PCW staff have been made redundant - Guy Kewney was freelance, but will continue his blogs & other work. I will join the ranks of freelance for the time being."

QL users on the mailing list recalled the early days of PCW in particular, such as this email from Norman Dunbar:

In a word, sad. PCW taught me Basic programming long before I ever had a computer to actually type it into. When I got my ZX-81 I had to start all over again as it was a different dialect of Basic! Them were the days.

While Malcolm Cadman felt it might be a sign of the times for the PC magazines:

It is a sign of the times that PC based magazines too are starting to close down. Some of it will be due to the web based information that is now available, no doubt.

While Bill Loguidice expressed the opinion that:

I prefer a good quality print mag myself, but it's impossible to beat the timeliness of the Web, which is why magazines in general are dying except for the usual stalwarts or those that are backed by big names. It goes without saying we have access to more essentially free information than ever, so why go to the bother and expense of paying for a print mag, particularly one that will likely be tossed once you're done with it? Sad, really, but it's hard to argue for in this day and age.

QL Today

While we wouldn't for a moment want to associate sad news like this with the QL community, readers of QL Today's most recent issue at the time of writing may have been forgiven for thinking the economic situation was having an influence there too, albeit with a much more positive outcome.

A slimmer 32 page magazine with lighter than usual green paper cover with the editorial comment stating that the magazine was "much thinner and lighter than previously". In fact, as the editor went on to explain, "the economics of current magazine production faced us with a choice of either putting up the price or of producing a smaller magazine at a lower price. We opted for the latter." The lighter magazine allowed postal savings. In fact, QL Today also opted for a slightly smaller typeface, allowing more editorial content to be included in the fewer pages, so well done QL Today for facing up to the economic challenge and taking a sound and positive decision to ensure the magazine's future.

QUANTA Magazine

The History According To Tony Tebby

Tony Tebby

"I said I would never do it, but apparently never is about 25 years." (Tony Tebby)

After David Karlin's account of QL history in Personal Computer World earlier this year, Tony Tebby has set about writing a series of articles about the background to, build up to and launch of the QL. In an absorbing series of articles in QL Today magazine, he presents his side of the story of the QL, with plenty of little known facts thrown in and correcting some of the long-held misconceptions often heard.

Tony says that while there are "well-researched histories" such as that by Ian Adamson and Richard Kennedy at:

www.nvg.ntnu.no/sinclair/computers/ql/ql_sst.html

he sets out to "...condense the story a bit, partly because these stories skirt over some grey areas that I can fill in..."

If you are at all interested in the history of the QL, this series will make great reading. The cover of the issue with the first part of the series says "Once you start reading, you can't stop." From what I've seen of the series so far, that's quite true!

Further details of QL Today magazine at:

www.qltoday.com

Micro Men

As part of the Electric Revolution season, BBC 4 broadcast a program on the 8th of October about the race for supremacy in the 1980s between Sinclair and Acorn. Called Micro Men, it featured Alexander Armstrong as Sir Clive Sinclair and Martin Freeman as Chris Curry of Acorn.

It charts the company through the latter period under the National Enterprise Board and on to the home computer revolution of the early 1980s. It shows the difficult relationships Sinclair had with Chris Curry when they worked together, and moves through the period when Chris Curry moved on and joined forces with Hermann Hauser after trying to persuade Clive Sinclair to enter the then fledgling home computer market.

Curry and Hauser went on to form Acorn Computers, who later were to go on to win the lucrative contract to produce the BBC micro to go with the new TV series of computer programmes, and other people like Nigel Searle joined Sinclair's inner circles as they moved on to form a new computer division headed by Nigel Searle following the modest success of the MK14 system, and as Sinclair began to realise that the computers at the time were expensive and limited, and set out to produce a low cost computer which anyone could have and use, the ZX80.

The program was introduced thus: "Paint a picture of success, people with characters, who have imagination, confidence in themselves, faith in the future and a very positive attitude to life, which means simply that they never take no for an answer."

Micro Men was shown on BBC 4 on Thursday 8th October, and available for a while to view using the BBC iPlayer service

Uconfig Updated

Version 1.08 of UCONFIG, which produces config blocks for S*BASIC, C and assembler programs, has a much improved method of altering existing config blocks. Previously only the S*BASIC block could be altered and only then if it did not change in size. Now, with the S*BASIC block as starting point new blocks for S*BASIC, C and assembler can be produced. The only limitation is that the existing number of items cannot be decreased.

The latest version is available for download from George Gwilt's website at:

http://web.ukonline.co.uk/george.gwilt/

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Parallax Propeller-based Hardware QL Emulator!

Our Web Administrator Keith Dunbar has come across an interesting new hardware emulator of the Sinclair QL, based on the Parallax Propeller system, normally used in manufacturing, process control, robotics, automotive and communications applications. Robotics is the connection here, as Keith Dunbar and David Buckley of NEMQLUG (North East Manchester QL User Group) have used this microcontroller for robotics, and is something Keith been talking about at NEMQLUG meetings

Here is a short extract from the Parallax website at:

www.parallax.com

explaining a little about the Propeller system:

"The **Propeller chip** makes it easy to rapidly develop embedded applications. Its eight processors (cogs) can operate simultaneously, either independently or cooperatively, sharing common resources through a central hub. The developer has full control over how and when each cog is employed; there is no compiler-driven or operating system-driven splitting of tasks among multiple cogs. A shared system clock keeps each cog on the same time reference, allowing for true deterministic timing and synchronization. Two programming languages are available: the easy-to-learn high-level Spin, and Propeller Assembly which can execute at up to 160 MIPS (20 MIPS per cog)."

The QL hardware emulator was developed by Ale Pacito, who can be contacted via his profile page at:

http://www.wikispaces.com/user/view/ale_pacito

(you need to be a Wikispaces member to access the email form). Here is an extract from his write-up on the Parallax Propeller forum site:

http://forums.parallax.com/forums/default.aspx?f=25&m=345196

"With the sounds of cymbals I present: pPropQL : a hardware emulator of the Sinclair QL!

* Real 68008 @ 8 MHz (1 MIPS)
* 128 K SRAM (4 cycles access), no cycle stealing needed! Video memory is mirrored into the propeller's HUB memory, reads occur from SRAM writes are routed to both
* 128 K Flash ROM (only 64 K mapped at 0x00000) 4 cycles access

+ One propeller for Video emulation

+ One propeller for the rest of IOs (Microdrive emulation, RTC, serial port, keyboard, etc)

But the most amazing feature is the trace capabilities. ROM reads can be traced because the A and D buses (as well as ROMCS* and DTACK* are routed to the video prop and DTACK* is driven by the prop or grounded).

Here are the schematics and board layout (Note: there are some air wires because this is a revision B, the revision A had some misroutings but now it works.

I used simple 1k27 resistors to connect the 5V bus to the 3.3V bus and a HCT245 to buffer the databus (not really needed, but to raise the voltage). All glue logic was done with discrete components from the HCT variant, so except for the 68008 that is a NMOS part (it could be done with a 68HC001 that has 8 bit bus capabilities, or was it the SEC000 ?) it draws little current (I need to measure!).

What works so far: trace, propeller as ROM!, ROM (I used an EPROM with the JS ROM for test). Video: well, I did not get the 4 color mode working yet :-(. The rest of IOs is still not done.

Cluso: This is what kept me busy for working with my triBladeProps...

Edit: As I have some 68EC020 (the ones that are TQFP100) from another project I couldn't finish, I'll make a third revision with that one too. (At 16 MHz you can get up to 10 MIPS with fast SRAM!) also in 10x16 cm boards."

A pPropQL board

Now you might ask (as I did) why he chose a Sinclair QL for this project? The answer seems to be that he had suitable processors to hand from other unfinished projects, so it was a natural progression. Keith told me that Ale is selling boards for as little as 25 dollars each.

The QL emulator is called pPropQL. Here's an extract from Ale's pages about it at:

http://propeller.wikispaces.com/pPropQL

"pPropQL

A hardware emulator of the Sinclair QL using the propeller. For a MC68020 based one see the pPropQL020 page at:

http://propeller.wikispaces.com/pPropQL020

Introduction

The Sinclair QL launched to the market in 1984 is a MC68008 based computer with custom supporting chips. The simplicity of its design compared to the Amiga or the AtariST make it a suitable candidate to what I call hardware emulator. Using an original processor and replacing the logic and custom chips with some glue logic and 2 propellers it is possible to get a replica. The functionality provided via two propellers, one as video controller and the other one as IO controller is enough, in my humble opinion, to get a functioning QL without using a real QL.

The aim of this project is to recreate this machine to the point that unmodified firmware and software can be used in it. Two prototypes have been built so far but more could be built if desired/needed."

[Keith has offered to write a full article on this topic as soon as his current work on the QUANTA Website is complete. Watch this space - as they say. Ed]

WEB SITE CORNER   Keith Dunbar

About Me

Having been away from the QL scene for may years I met up with John Gilpin about 2 years ago, at a Scouting function, and we started discussing QLs (Put any 2 QLers in a room and they are bound to start talking about QLs at some point!). This was the point at which my interest in QLs was reignited!

The QL gave me my first insight into programming, and I remember sitting with my brother until the wee small hours of the morning writing SuperBASIC code to generate patterns. From there I went to university to read Computer Science & Electronic Engineering and went on to become a programmer in C, C++ and Java. I now work for a company called Knowledge Powered Solutions in Runcorn writing a Java/J2EE based neural search engine/knowledge management tool aimed mainly at help desks, self service and the new American 311 call centres.

I also maintain/administer/consult-on several web sites, and administer domain names for myself and several groups.

The QUANTA Web Site

During my discussions with John Gilpin and other members of NEMQLUG (the North East Manchester QL User Group) the issue of the QUANTA web site continued to crop up with the long standing problem of how to maintain a web site without all the changes going through one individual as this creates a bottleneck (especially when that person is unavailable). My answer was to use a CMS (Content Management System) on the web site as this would allow many people to edit the site directly and at the same time.

After some discussion with the committee we came up with 2 CMS systems, Typo3 and Joomla. These are both free systems and either myself and/or Dan (the web master) could maintain them. Some investigation was performed by the committee and given the features of both systems Typo3 (www.typo3.org) was selected. The main benefit that it provided was to allow individuals to be given access to specific pages without requiring approval, which means, for example, that each QUANTA sub group could be given its own page which they could edit to suit their own requirements. This also means that any QUANTA committee member, editor or any regular contributor could be given access to edit portions of the web site directly.

Now that Typo3 has been selected, our main focus is on the layout and styling of the pages and the content, including the menus, and this is a job for the whole committee. With any luck the site should be ready to go public before Christmas, but only time will tell!

If you have any content that you would like us to include in the new web site, or if you would like to write an article please send it to:-

webadmin@quanta.org.uk

HELPLINE   Dilwyn Jones

In the last couple of issues I've looked at transferring files in and out of emulator environments using serial cable links and the tools software used by the Qlay / Qlay 2 / QL2K emulators.

In this issue I'd like to take a look at using floppy disks to transfer files between a QL and an emulator, some DOS/Windows file transfer software and the DOS device of QPC2.

QPC

This is the simplest one to use when it comes to floppy disks. Files on floppy disk are accessed just like using a QL with a floppy disk interface. The device name is FLP1_ like most QL disk systems and files can be saved, loaded, copied etc from disk just like a QL. There might be a bit of a difference in speed, but the biggest difference is that QPC lets you read and write to a DOS-formatted disk pretty much as if it were a QDOS disk, except that executable jobs (programs you start with EXEC or EXEC_W) can't be stored on a DOS format floppy or they lose their file headers and you can no longer execute them. There may also be a limit on the length of the filename you can use from QPC2 with a DOS-format floppy disk, and there may be a few characters you can't use in filenames.

But for transferring text files and other data files, this is extremely useful. Just make sure you give filenames an extension starting with a '.' character instead of the usual QDOS '_' character and you'll be all right:

On a QL disk: SAVE FLP1_AFILE_TXT

With a DOS floppy disk: SAVE FLP1_AFILE.TXT

On more recent versions of QPC2, you don't even need to put a filename ending with '.' in quotes!

On most PC's, QPC's floppy drive 1 (FLP1_) corresponds to drive A: on the PC, while FLP2_ will correspond to PC drive B: but are still referred to as FLP1_ and FLP2_ irrespective of whether a DOS or QDOS floppy disk is being used.

Do bear in mind that while QPC2 lets you save/load to either type of floppy disk, the format of the data is NOT converted by QPC. The QL uses a linefeed character (CHR$ 10) to end a line of text, while PC programs might expect either a carriage return (CHR$ 13) or both, for example. If you save such a QL text file to a DOS format floppy disk and try to load it into Windows Notepad for example, you might get offset lines like this:

```
Line 1
     Line 2
          Line 3
```

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www.rwapadventures.com

RWAP Software provide a wide range of software and hardware for the Sinclair QL, Cambridge Z88 and ZX Spectrum computers and continue to support and promote the Sinclair community well into the future.

As well as a wide range of software products (adventures, games, utilities, business software and a route finder), we also supply the SBASIC/SuperBASIC Reference Manual and a wide range of second hand hardware, software and books (from books on Quill through to Super Gold Cards).

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This happens because as far as some PC programs are concerned, a linefeed or CHR$(10) is just that - go down one line. The Carriage return makes it go back to the start of the line, so ideally the file needs to contain both Carriage return and linefeed for the PC program to display the text file correctly, although some programs such as Word and Wordpad will sometimes just about cope with just the QL-style single linefeed at the end of the lines.

To transfer QL text files to the PC, either save them as a plain text file with the two end of line characters, or use a program such as Geoff Wicks's QL2PC which can also convert QL text files such as Quill Docs into RTF (or Rich Text Format) which will import easily into most modern PC word processors. Programs such as Dave Walker's Textidy can also be useful.

To transfer text files to a QL from a PC, it is probably easiest to make the PC word processor save the text as a plain text file. This will lose formatting but will at least strip out all the difficult to handle control codes modern word processors tend to insert. Jonathan Hudson has a program called CATDOC which can let you transfer Word 6 documents to QDOS, although I've never used it to know exactly what it can do. Find it at:

www.daria.co.uk/qdos/

Similarly, when trying to exchange spreadsheets or databases between the two systems, it is generally safest to use Export files. The file format of QL and Windows programs are generally too different to ever hope that Windows Excel could ever hope to load Abacus _aba files (and vice versa). The Export command of the Psion Archive and Abacus programs are not too dissimilar to the CSV (or Comma Separated Value) format widely used to transfer data between Windows programs. For spreadsheets, you can only transfer data in this way, the formulae will usually be lost, but at least you can get the data from one machine to another. The Export and CSV formats are not quite the same - Export tends to make more use of quote symbols than CSV, although it is not too difficult to tidy files up by hand where this is an issue.

QemuLator

For the most part, QemuLator's floppy disk is very similar to QPC's, although the drive assignments are not fixed. You can have up to 8 drives

in QemuLator and any of these can be MDV slots, FLP drives or WIN drives if using the Native File Access on the PC's hard disk.

The picture above shows QemuLator as it starts. The drive slots are the ones in the bottom block, the grey strips with numbers to the left. If only two drives are shown, drag the baseline down to reveal all eight. When blank like this, no drives are attached to them, so click on one of the drives and a little window pops up asking what type of drive to use - this may be a QXL.WIN (registered versions of QemuLator only), a native (Windows) hard disk, or a floppy disk drive.

There is a fourth option - Empty. This just removes an existing definition. When you click on "QDOS Floppy Disk" it asks if this should be the PC's drive A: or drive B:. On a PC with just a single floppy disk this will usually be A:.

But the strange thing is that this drive can be assigned to any of the 8 slots, so the PC drive A: can be FLP1_ or FLP4_ or FLP8_ or whatever, depending on which slot you connect it to. Even worse, all eight drive slots respond to MDV, FLP and WIN! On QemuLator, MDV1_ FLP1_ and WIN1_ are normally the same drive! This makes it easy to run software originally configured to run from MDV1_ for example, just by copying it from a QL Microdrive onto a QL floppy disk which is then run from the PC floppy drive with the above drive slot 1 attached to QDOS Floppy Disk on PC drive A:

Sounds horrendously complex, in fact it's far easier than it sounds and something you quickly get used to. In fact, it's tremendously versatile. You could even copy the floppy disk content to a QemuLator directory on the hard disk by Attaching a Directory to slot 2, the floppy disk to slot 1, then copying from FLP1_ to WIN2_, then swapping the two over so that the hard disk directory is now drive 1 and because the MDV, FLP and WIN drives are notionally the same, you can run the program from there without reconfiguring the QL program.

Do remember that on QemuLator you can store QL executables on the hard disk if you put them there using QL commands like COPY - the file headers are added to the programs when copying to the hard disk directories in a way special and unique to QemuLator.

Floppy Disk Readers

There are quite a few QL disk reader programs out there, some designed to run as a DOS program and a few as Windows programs. You can generally get them from the usual sources of PD software such as websites which let you download QL software.

We have already mentioned the QLTools program. There are other QL disk reader programs and they all have one thing in common - they let you list the files on a QL floppy disk and copy them one by one to a PC hard disk. Some of these programs are quite old and many will only handle level 1 disks, i.e. they don't know about QL directories.

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Probably the most versatile of these QL disk reader programs running in Windows is Jonathan Hudson's WXQT2 program. Once fully set up (and I'd be the first to admit it's not easy) you can transfer files between QL floppy disks, PC directories and QXL.WIN directories. You need the qltools program (make sure you choose the correct version - there's one for older FAT PC disk formats such as used on Windows 95 and 98 systems, and another for NT-style hard disk formats such as that used by Windows NT, XP and Vista) to read QL floppy disks - make sure it's called QLTOOLS.EXE. You also need the QXLtool program (QXLTOOL.EXE) in the same folder as the main WXQT2.EXE program, as QLTOOLS.EXE and QXLTOOL.EXE are the ones which do the hard work - WXQT2 is just a nice Windows front end onto these two programs.

Once you have all three in the same folder, start WXQT2.EXE in Windows. You should get a program with two main windows, like this:
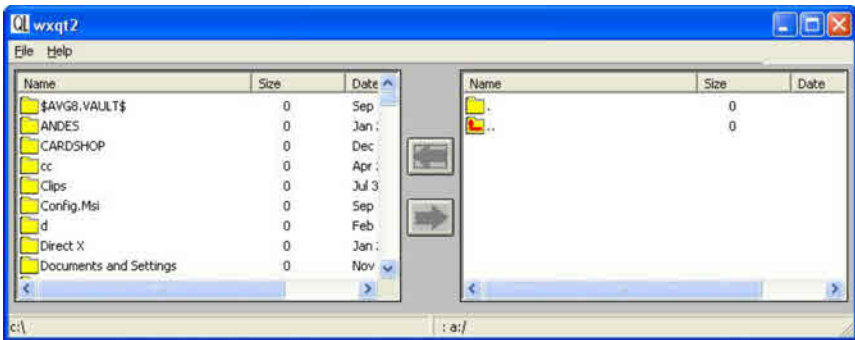
Where you see the File command at the top left, click on Options in the little menu which appears and this menu appears.

The tick boxes in the top right select which type of media is read in the left and right windows. Here, the left column has a tick against the native directory C:\ (i.e. Windows drive C - hitting the Browse button between them lets you select which drive/folder to use) and the right column has a tick against QL Floppy. Practise copying files between a spare QL floppy disk and a PC hard disk folder first, before trying the QXL.WIN Disk File option, it is all too easy to wreck a QXL.WIN when you are not sure what you are doing!

Once the drives are set up, it can then read the respective drives:
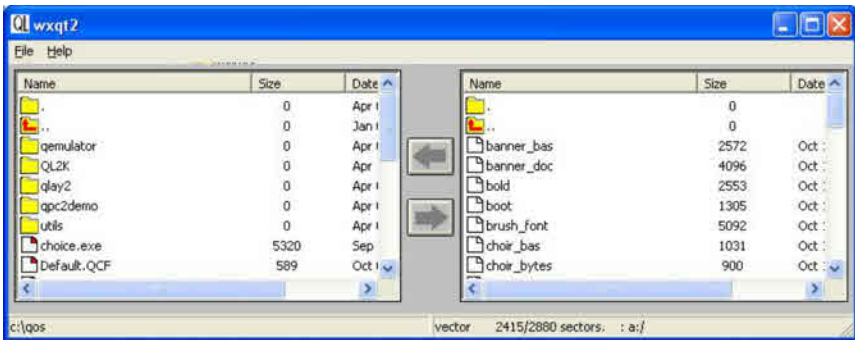
Here, the left window shows files in the QOS folder on my PC's drive C:, while the right hand window shows files on a QL floppy disk in PC's drive A:. Now, just click on the files you want to transfer, then click on one of the arrows in the centre to indicate which way to copy (e.g. click on the upper arrow to transfer from the QL floppy disk to the PC hard disk).

You can get QLtools, QXLtool, and WXQT2 from Jonathan Hudson's QDOS website at:

http://www.daria.co.uk/qdos/

From there you can also get a program called mtools, which is a program for doing the opposite - read PC format floppy disks on a QDOS system.

The DOS Device

This is a special device name built into QPC2. It lets QPC2 read and write to folders on the Windows hard disk. It is used just like a WIN device. You can have up to 8 drives (DOS1_ to DOS8_) and each of those can be defined either in the startup configuration alongside the WIN drive

definitions, or by using the DOS_DRIVE keyword to define the DOS drives like you would use WIN_DRIVE to define the WIN drives, e.g.

DOS_DRIVE 1,"C:\"

So, after that you can do DIR DOS1_ to give a list of files on the PC's C:\ drive. And not just the drive itself, you can include a folder to. So, if you normally transfer QL files to a folder called C:\MYQLFILES\ on the PC, you could define DOS1_ as:

DOS_DRIVE 1,"C:\MYQLFILES\"

If your PC has more than one hard disk, or a CD drive, you could define up to 8 separate DOS drives. Do bear in mind that QL filenames are limited to 36 characters plus the drive name, so long paths can trip up even the DOS device. So, saving this filename into the folder called My_QL_Documents on the PC:

DOS_DRIVE 1,"C:\"
SAVE "DOS1_My_QL_Documents_a_very_long_filename_indeed_bas"

might fail, because of the length of the name. If, however, you incorporate the folder name into the DOS device name it allows you to use the full 36 characters after the DOS name, potentially doubling the length of name, nested folders etc you can handle from QPC:

DOS_DRIVE 1,"C:\My_QL_Documents_"
SAVE "DOS1_a very long filename indeed_bas"

This comes in handy when you are accessing nested PC folders from QPC!

Please note that the WIN device accesses QL files held in a single massive Windows file called QXL.WIN (you can use a different name). If you have never come across QXL.WIN files before, this is a sort of "container", one large Windows file which holds all your QL files in a form which preserves QL file headers and so on - in effect a second filing system inside a single Windows file. Want to back up the QL files in your QPC2? Go to Windows and just record the file called QXL.WIN onto a CD or Flash Memory Pen Drive. As far as the PC is concerned, all of your QL files in the QXL.WIN are just one massive Windows file!

POINTS OF VIEW

George Gwilt Wrote:

Comments on Chaos Theory

I was intrigued by Steve Poole's article on Chaos theory in QUANTA Volume 26 Issue 4. His program shows some results of the iteration:

$$x(r+1) = x(r)*(4 - 3*x(r))$$

with x(0) = 1/2.

His program shows what the QL, with its fp mantissa of one long word, does with up to 70 iterations, the results of every tenth one being printed out along with numbers under the heading "Exact". This word excited me. How could .385 be the exact number produced after 10 iterations?

I determined that I would attempt to find that exact number myself. Having found the first three numbers to be 1.25, .3125 and .95703125, I began to have grave doubts that the tenth one would be a simple .385. Indeed I nearly gave up because the number of decimal places was becoming too large.

Then I thought it might be better to stick to integers by expressing the result as a fraction. This fraction would be one integer divided by another. I wouldn't really mind if some fractions were vulgar. The first five exact results are:

1. 5/4
2. 5/16
3. 245/256
4. 70805/65536

The numbers are getting large here so the next one is not given in full.

5. (70805*49279)/65536*65536)

At this point I gave up my attempt to tackle the problem this way.

You will notice that the denominators are all powers of 2. Indeed the tenth denominator would be 2^{1024}. This is roughly 1.8E308 as they say in the trade. This will have 309 digits, which I will not show you here (though as a matter of fact I do have a program which can print powers of two up to 32767).

By now you will perhaps agree with me that Steve Poole's exact numbers are approximate. Thus .385 must be taken as between .3845 and .3855. But how to calculate these?

As a last attempt I thought I would use the floating point IEEE standard to do the iterations. This is quite easy on a Q40/60 which, of course, has an FPU and comes with software making it easy to use. This produced the following:

	IEEE Exact	Steve Poole's Exact
10.	.384631	.385
20.	.418895	.419
30.	4.639948E-2	4.63E-2
40.	.3201871	.32
50.	6.223541E-2	6.22E-2
60.	5.1367E-3	4.9E-3
70.	.6426588	.553

You will see that the first five of these agree apart from a blip at the third. But after that there is an obvious divergence. Only one significant figure can be taken as equal for the last two.

It would be interesting to know how Steve Poole calculated his exact numbers. I have the horrible feeling that some numbers are more exact than others. Ah, but which?

And in similar vein, Alex Wells sent the following email:

Hi Steve,

Your regular articles in QUANTA usually stimulate my interest, but I have a problem with the wording (not the program) in your article on Chaos.

The program has a term x^2 with rapidly increasing powers of 0.5

(i.e. "1/2") as the iterative process proceeds in the first loop - e.g. the exact result from the 3rd iteration is 245/256.

I suspect the exact result after the first 10 iterations would need over 1000 decimal places - as (an odd number)/2^{1024} will be part of the answer. Please correct me if wrong!

I get about 0.385011548 and the QPC version of the QL gives 0.384631, using the 'Wine' Windows emulator in Linux.

Is the number 0.385 given in your DATA statement
really an exact answer for the first result,
or is it just a higher-precision approximation?

Regards, Alex.

[Obviously there is some interest in this article from Steve Poole and I have emailed him requesting his comments and/or explanations on the above remarks. I hope to publish his reply in the next issue - Ed]

[If you have any comments or observations about articles published in QUANTA Magazine or, indeed, any other QL related topic, please send them to:

editor@quanta.org.uk

And include "Points of View" in the subject line. Thanks. - Ed]

STARTING CHESS GAMES FROM LAUNCHPAD
Duncan Neithercut

I like a game of chess, not that I am strong player. If anything I am a weak player so playing against a computer spares my blushes and lets me sometimes learn and sometimes win. Psion chess was possibly the first 3D chess game on a home computer. I have this on Microdrive and planned to find time to crack the copy protection and transfer it to disk but have never got around to that. Meanwhile I played chess with a copy of GNU chess that came on the first QL CD. This was not a QL Today cover CD but a CD cover disk from Amiga Format.
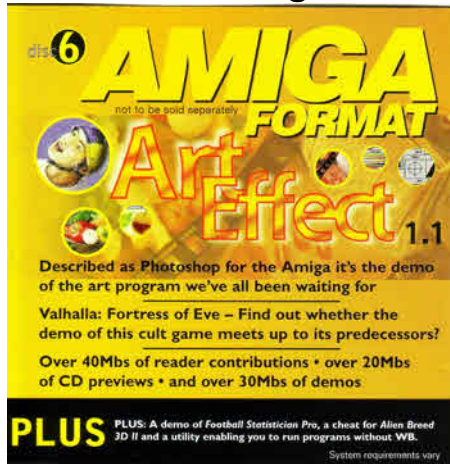
Simon Goodwin in 1996 was contributing a series on emulators for the Amiga and naturally he covered the QL emulator for the Amiga. This emulator later evolved in to QDOS classic for the Q60. In 1996 he persuaded the publishers of Amiga Format to release this CD, disk 6, full of PD QL goodies. The publishers made a mess of the unzipped executable files and some fixes had to be published on a subsequent cover CD. GNU chess came in a zipped file and so was usable from the start. Much later I acquired a copy of Black Knight Chess from QBranch. When I bought it Roy Wood advised me that Black Knight Chess could not run on modern systems such as the Q60 or QPC2.

Recently while rummaging around on the Internet I came across a site that had a cracked copy of the Psion chess game for download. Naturally as I already owned a legitimate copy and had planned to transfer it to disk I downloaded it. Go to:

http://www.speccy.org/sinclairql/

and choose utilidades and scroll down to Psion chess.

The question for me is not actually, will these programs run on modern QL systems such as the Q60 and QPC2. Both of these have mode 4 QL compatible modes, which will provide the correct environment for them. My question is, is it possible to get them all to execute from LAUNCHPAD on a high resolution, high colour screen on a Q60 or QPC2?

My LAUNCHPAD with all 3 chess launching icons at the bottom right.

To deal with them in order of easiest to set up first to hardest to set up last, the first to consider is GNU chess. This program written in C and ported to the QL by Gerome Grimbert does not seem to have any difficulty running on the Q60 or QPC if set up as stated in the manual. It is pointer driven and happily multitasks with other programs and gives a tough game of chess. The size of the screen area occupied by its window is 512x256 and the sprites used for the pieces are large so the game is easily visible on a large display, which is useful for multitasking. GNU chess only uses the four basic QL colours but has no difficulty running on a high colour display.

The GNU chess, colours here have been tweaked from the standard QL colours. GNU chess is launched using a SBASIC wrapper I use to configure the settings for GNU chess.

```
10 REMark my wrapper for GNU chess April 2006
15 errt=FOPEN("con_") :IF errt<0 : STOP
20 DATA_USE Win1_PRG_CHESS_
30 PROG_USE Win1_PRG_CHESS_
40 Set_Mode 4_Colours
50 EX Win1_PRG_CHESS_Chess
```

```
60 QUIT
4260 DEFine PROCedure Set_Mode 4_Colours
4270 REMark deepblue=$2222FF
4270 deepblue=$00FFFF
4280 crimson=255*65536+100
4290 REMark orange=$DB6D00
4292 orange=$DBFFDB
4300 yellow=255*65536+255*256+11
4310 skyblue=69*65536+256*252+249
4320 sea=$22FFFF
4330 white=$FFFFFF
4340 PALETTE_QL 0,0,deepblue,orange,crimson,sea,deepblue,yellow,white
4350 END DEFine
```

Next in difficulty comes Psion chess. This program was reviewed in QL World October 1986. The review notes that at the time it was the champion world chess program for a microcomputer. The problem to overcome for this game is that the program writes directly to the screen memory. This means that it is absolutely not compatible with high resolution and high colour displays. Solutions can be simple. On QPC2 on launch it is possible to select both the resolution and colour depth prior to booting the QL emulation. So select QL mode 512x256 and Psion chess will run without complaint. On the Q60 boot into QDOS classic and Psion chess is happy. However this does mean a dedicated boot to get into the program. To launch Psion chess from LAUNCHPAD requires some quite destructive system configuration changes on the fly.

First of all I usually have the system asleep on a button called SBASIC. This needs to be woken and the SBASIC system windows opened to allow the required change in colour depth down to mode 4. The first step was to create a Hot Key to wake the system SBASIC.

I added – ERT HOT_WAKE (CHR$(236), 'SBASIC asleep')

to my standard boot. Note that I have changed the name of the system asleep job in QPAC2 to "SBASIC" from the original "system". Pressing ALT F2 pops open the SBASIC system windows. Next I created a small Qliberated job to be started by the LAUNCHPAD Psion chess icon. I used a Qliberated job for this to avoid the FI2 menu that I have for executing SBASIC programs. The job activates the F2 hotkey and when the SBASIC windows are open uses the DIY Toolkit extension QUEUE% to type into channel#0 the command line:
        "LRUN Win1_PRG_PSION_ChessBoot_bas"&CHR$(10).

This loads the first of 2 SBASIC programs to adjust things.

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The first sets the open window size to 512,256 using the TK2 WMON command followed by the DISP_SIZE 512,256 command to change the screen resolution. Finally it loads the second program with LRUN. The second program uses the DISP_COLOUR 0 command to change the screen colour depth to mode 4 colours. Finally it executes the Psion chess program. The reason there are two SBASIC programs is that if this series of commands are given too quickly there will be memory corruption. If done slowly Psion chess is able to be used. And there it is:

and another picture, on the right, to try to prove that it is running under smsq/e on a Q60.

Finally there is Black Knight chess. This program was also written in C. To get it to run required use of the C68 patch provided on the Q60 support disks. All the modules, and there are 4 need patching. Once patched a further problem was identified. As the program as explained in the manual attempted to grab all available memory when it started it locked up when faced with memory of more then 8MB. This then was a problem for my Q60 as it has 48MB as standard. Even on QPC2 this was a problem. The memory size was set at launch of QPC2. So a dedicated start up would be needed. I looked around for memory reduction programs but none I found on the web worked on modern systems. But I also asked on the ql-users forum and Marcel Kilgus immediately replied with this snippet of SBASIC, which cuts memory to 4MB with a soft restart.

```
100 a=RESPR(100)
110 POKE_W a,$287C
120 POKE_L a+2,$400000
130 POKE_L a+6,$70254E41
140 POKE_L a+10,$4EF80900
150 CALL a
```

I also discovered that if line 120 was adjusted to be 120 POKE_L a+2,$800000 I could have 8MB of memory which gave just enough memory for a standard boot with all the usual jobs running plus Black Knight multitasking.

Black Knight uses a pointer window that is smaller than 512x256 and fairly small icons for the pieces, which can make the game, better played on a lower screen resolution but otherwise it too is a superb game of chess.

Which one is best? They are all good and have different merits. They have different playing styles as well. I can recommend them all. The one I like best is Psion Chess more for its 3D display than to do with its game play style.

IF VER$ =   Dilwyn Jones

T he title of this article is actually one of the shortest and potentially most useful pieces of code I've found in all my years with the QL.

It's a simple little line of code which lets your programs do different things on different systems. By and large, all versions of QL BASIC have been around long enough for us all to know what each version can do. By checking the version of BASIC we can let a program do different actions, taking advantage of facilities added to Minerva or SBASIC systems for example.

Probably the simplest example is that of a program which needs to be able to open a window to fill the entire screen. On a QDOS machine, it

is pretty safe to assume that the display will always be 512x256 pixels (the uQLx emulator can be an exception), but modern SMSQ/E systems can have screens with many more pixels across and down the screen. SBASIC on these systems has extensions which return the width and height of the screen, for example. The SBASIC function SCR_XLIM tells us how many pixels across and SCR_YLIM the number of pixels down.

So, since SBASIC always has a VER$ of "HBA" all we need to do is test the version of BASIC with VER$ and if it turns out to be SBASIC, we can call SCR_XLIM and SCR_YLIM, otherwise assume bog-standard QDOS default values.

Here's a sample little program:

```
1000 DEFine PROCedure Cover_The_Screen
1010   wide = 512 : high = 256 : REMark QDOS defaults
1020   v$ = VER$
1030   IF v$ = 'HBA' THEN
1040     wide = SCR_XLIM
1050     high = SCR_YLIM
1060   END IF
1070   WINDOW #0,wide,high,0,0
1080   CLS #0
1090 END DEFine Cover_The_Screen
```

This little program lets channel #0 cover the entire screen on virtually any system. All it does is assume first it's going to run on an old QDOS system without any high resolution screens, then it checks VER$ to see if it's running on an SBASIC system and if it is, tries the new keywords to make use of the new facilities if they exist on this system.

Before we go any further, a small note about line 1020. Some older versions of QDOS have a minor issue with the VER$ function which can cause problems if used directly in some complex expressions such as IF clauses, so it is usually safest to assume that it is best to copy it to a string variable first, then use the variable in IF phrases or string expressions. If the variable name I've used in these examples is used in your programs, just add something like 1005 LOCal v$ to limit values to local within procedures or functions.

If you have a graphical program which PEEKs and POKEs the display (naughty!) it can be handy to extract the relevant information from the system where keywords are provided to do this. To PEEK and POKE in

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the display on modern systems, we need to know the following in addition to the above:

(1) the base address of the screen, and
(2) how many bytes across the screen

We can extend the above example program to use the SCR_BASE and SCR_LLEN functions to return the screen base address and screen line length in bytes respectively:

```
1000 DEFine PROCedure Cover_The_Screen
1010   LOCal v$
1020   wide = 512 : high = 256 : REMark QDOS defaults
1030   sbase = 131072 : REMark screen base address on Sinclair QL
1040   bpl = 128 : REMark line length in bytes on Sinclair QL
1050   v$ = VER$
1060   IF v$ = 'HBA' THEN
1070     wide = SCR_XLIM
1080     high = SCR_YLIM
1090     sbase = SCR_BASE
1100     bpl = SCR_LLEN
1110   END IF
1120   WINDOW #0,wide,high,0,0
1130   CLS #0
1140   PRINT #0,'Screen width = ';wide;' pixels'
1150   PRINT #0,'Screen height = ';high;' pixels'
1160   PRINT #0,'Screen base address = ';sbase
1170   PRINT #0,'Screen line length in bytes = ';bpl
1180 END DEFine Cover_The_Screen
```

On an original QL, you'll get values of 512 pixels wide, 256 pixels high, base address of 131072 and a line length of 128 bytes. On a more modern system with bigger display, you'll get the results for that system. Where this can come in handy is to reliably save a screen picture. On a QL, this just involves saving 32,768 bytes from address 131072. On a Q40, QPC, QXL etc this might be more complex as both the size and location of the video screen can vary. But it's quite easy to work out, using the SBASIC functions listed above:

```
2000 DEFine PROCedure Save_The_Screen (filename$)
2010   LOCal v$
2020   wide = 512 : high = 256 : REMark QDOS defaults
2030   sbase = 131072 : REMark screen base address on Sinclair QL
2040   bpl = 128 : REMark line length in bytes on Sinclair QL
2050   v$ = VER$
2060   IF v$ = 'HBA' THEN
2070     wide = SCR_XLIM
2080     high = SCR_YLIM
2090     sbase = SCR_BASE
```

```
2100     bpl = SCR_LLEN
2110   END IF
2120   SBYTES filename$,sbase,high*bpl
2130 END DEFine Save_The_Screen
```

This works out where the screen starts in memory, then saves a chunk from memory depending on the height of the screen (the variable high) and the number of bytes per line.

To reload a screen, just LBYTES the screen to the relevant base address. We need to be careful that the screen is the same size as the previously saved file, the length of which we can check with the FLEN function of Toolkit 2 (built into SBASIC).

```
2150 DEFine PROCedure Load_Screen (filename$)
2160   LOCal fl,v$
2170   fl = FLEN(\filename$)
2180   bpl = 128
2190   sbase = 131072
2200   high = 256
2210   v$ = VER$
2220   IF v$ = 'HBA' THEN
2230     bpl = SCR_LLEN
2240     sbase = SCR_BASE
2250     high = SCR_YLIM
2260   END IF
2270   screenlength = bpl * high
2280   IF fl = screenlength THEN
2290     LBYTES filename$,sbase
2300   ELSE
2310     PRINT #0,'Unsuitable screen'
2320   END IF
2330 END DEFine Load_Screen
```

It is possible to harness Minerva extensions like this too. For example, QDOS has no function to tell you the base address of the system variables, because they are always at a fixed address of 163840. On a Minerva system, a second 32K screen may be in use at that address, so the system variables have to move to another address. They may also be at a different address on SMSQ/E systems, because the screen can vary in size for example. So we need a method of finding out where they are without having to resort to machine code. The answer is that Minerva and SBASIC have a special form of the VER$ function which can return the base address of the system variables - VER$(-2)

```
3000 DEFine FuNction SystemVariables
3010   LOCal v$
3020   v$ = VER$
3030   sv = 163840 : REMark default for old QDOS systems
```

```
3040   IF v$ = 'JSL1' OR v$ = 'HBA' THEN sv = VER$(-2)
3050   RETurn sv
3060 END DEFine SystemVariables
```

So you can see that the underlying principle is to apply sensible default values which apply to an original QL with a Sinclair ROM, then test the version of BASIC and if Minerva ("JSL1") or SBASIC ("HBA") are detected, use extended facilities.

Qliberator will allow you to compile programs like this, where extensions are typed into a program but not always used, depending on system it runs on. Turbo won't - it tests for the extension being present as the compiled task starts and stops with an error message if a program includes, say, the keyword SCR_LLEN, but the system doesn't have that installed. So the technique is less useful in Turbo compiled programs.

Exists

This is another very useful extension which can be used for the same sort of programming concept. It checks through the name table for a given keyword and returns 1 if found, or 0 if not.

This allows a program to check for the existence of a particular keyword and take different actions depending on whether or not it was found on the system. Again, less useful in compiled programs, although very useful in interpreted programs.

EXISTS is a basic extension function by Phil Borman, available from the Toolkits page on my website at:

http://www.dilwyn.me.uk/tk/index.html

A simple line like IF EXISTS('TK2_EXT') lets you check if Toolkit 2 extensions exist on your system.

A good example might be checking if the Jochen Merz menu extension exists on this system. Just check for an extension you know exists in menu_rext:

LET mr = EXISTS('FILE_SELECT$')

You can even check of pointer environment is installed:

LET pe = EXISTS('CKEYON')

This checks if the CKEYON (Cursor Keys On) extension is present, though this is less reliable as the authors of the pointer environment might one day choose to leave this out of pointer environment or SMSQ/E!

However, simple programming techniques like the above can help your program make use of facilities on more recent systems, while still being able to run on older systems. I've found techniques like this to be a useful and very basic way of updating old programs to run on modern systems without sacrificing the ability to run on older systems.

A Progress Marker   George Gwilt

Whenever a program pauses while lengthy calculations are taking place behind the scenes it is useful to have some indication to the user that indeed a result will appear sometime if only he will be less impatient. It may be enough simply to print on the screen the words "Please wait". But after a minute or two of staring at a static screen even the more phlegmatic user may suspect that the QL has crashed once again. To reassure users in these circumstances I often resort to the common practice of displaying a progress bar. The last time I did this I swore that this would be indeed be the last time I wrote such a piece of code. The result is a simple general purpose assembler subroutine which can be used in all programs and which I will now describe.

The progress bar consists initially of a rectangular window with QL colour 255, or grey, in which a black block is printed. As time progresses a green block of increasing size is printed over the black block. When the operation is complete the progress bar disappears disclosing whatever was originally underneath it.

The indicator bar has a depth of 10 pixels and a width of between 0 and 120 pixels, which allows just 121 different sizes of indicator. The window holding the block has its origin at (64,100), which is roughly at character position 6 in row 10 of the screen. When I showed this first there was a complaint that it was covering some lettering on the screen. Although, of course, this lettering was restored when the indicator disappeared, nevertheless I altered the routine to allow the user to supply his own origin for the display window.

Using the Routine

First Entry

The routine has two entry points. The one to be used first arranges for the window to be opened at either the required origin or the default origin.

For this entry point the register D0.L is set to -1 to indicate that the default origin should be used or is set to x in the high word and y in the low word to set the origin at (x,y).

For this entry point no registers are used except D0 which contains on exit either 0 to indicate a good exit or -1 to indicate a fault.

Second Entry

For the second entry point, a word length number, which should be between 0 and 120, is put on the stack. On exit D0.L contains the error code as for the first entry. As for the first entry no other registers are used.

The routine forces the number on the stack to be between the limits 0 and 120 inclusive. Furthermore it takes no action if the number on the stack is the same as the previous one since, of course, in this case there is no change in the display. This will save a tiny amount of time.

When the number reaches 120, the window is closed and the previous contents of the screen replaced.

Machine Requirements

The routine needs PTR_GEN to be present. There are no other requirements.

It is perhaps worth pointing out that the reason PTR_GEN is needed is that this contains two very powerful routines. These trap #3 routines are iop.svpw and iop.rspw. These respectively save and restore part of the contents of a window.

The first routine can set up an area of any size into which designated

rectangular sections of a window can be saved. Designated rectangular sections, possibly of a different size, from this save area can be placed anywhere in any window, not necessarily the original one.

The Assembler Subroutine

The assembler code is shown here. The first entry is called "set_m1" and the second "mark".

```
;       The entry "set_m1" sets the window for mark if asad = 0.
;       At entry D0 = -1 for don't set origin, else D0 is the new origin.

;       The entry "mark" with k (word) on the stack (k between 0 and 120)
;       marks k/120 complete. When k=120 the window disappears.

;       "mark" only works if asad <> 0.

;       No registers except D0, which, on exit, contains the error code, are
;       used.


iop.svpw        equ             $6d
iop.rspw        equ             $6e


;       This entry sets a new mark and closes down if k = 120

rgl             reg             d1-3/a0-2       list of registers to be saved
. .
mark            movem.l         rgl,-(a7)       . . save them
                tst.l           asad            mark set? . .
                beq             end             . . no - do nothing
                move.w          28(a7),d1       k
                bpl             mk1             k > 0
                moveq           #0,d1           set a negative k to zero
mk1             cmpi.w          #120,d1         is k > 120? . .
                blt             mk2             . . no
                moveq           #120,d1         set k = 120
mk2             lea             bl,a1           block definition to A1
                cmp.w           (a1),d1         same as last time? . .
                beq             end             . . yes - do nothing
                move.w          d1,(a1)         set the new block size
                moveq           #4,d1           green
                movea.l         id,a0           channel ID to A0
```

```
        bsr       bk                draw the block
        cmpi.w    #120,bl           last number? . .
        bne       end               . . no
```

;   The display is complete so we restore the contents and close the window

```
        moveq     #0,d1             start at 0,0 in save area
        moveq     #0,d2             throw away save area
        lea       sze,a1            window block (size/start)
        movea.l   asad,a2           address of save area
        moveq     #iop.rspw,d0      restore saved area
        bsr       tp3
        lea       asad,a2
        clr.l     (a2)              set asad -> 0
        movea.l   id,a0
        moveq     #io_close,d0      close the window
        trap      #2
        movem.l   (a7)+,rgl         restore the saved registers
        tst.l     d0                set the condition codes
        rts
```

;   This entry sets up a new window for the mark and saves the area

```
set_m1  movem.l   rgl,-(a7)         save the registers
        tst.l     asad              already done? . .
        bne       end               . . yes - do nothing
        bsr       ope               open window (but do not clear it)
        bne       error   ----->
        lea       id,a1             keep the . .
        move.l    a0,(a1)           . . ID
        moveq     #0,d1             start of block is 0,0
        move.l    #$80000E,d2       size of area is 128,14
        moveq     #-1,d3            timeout
        lea       sze,a1            window block (size/start)
        moveq     #iop.svpw,d0      set up the save area
        bsr       tp3
        lea       asad,a1           keep the save . .
        move.l    d1,(a1)           . . area address in asad
        lea       sze,a1            size of block (whole window)
        moveq     #-1,d1            grey
        bsr       bk                draw the block
        moveq     #0,d1             black
        lea       bl,a1             size of marker block (inside window)
        bsr       bk                draw the internal black block
        lea       bl,a1             force mark . .
        move.w    #121,(a1)         . . 1st time
```

```
end          moveq      #0,d0            error free return
end1         movem.l    (a7)+,rgl        restore registers
             rts

error1       addq.l     #4,a7            adjust stack
error        moveq      #-1,d0           mark error
             bra        end1
```

;   Subroutine to open the window

```
ope          move.l     d0,-(a7)         keep origin marker
             Lea        wdw1,a0          "scr"
             moveq      #-1,d1           this job
             moveq      #0,d3            open key (just "open")
             moveq      #io_open,d0      open the channel
             trap       #2
             lea        wdw,a1           required size/origin
             move.l     (a7)+,d1         origin marker
             bmi        ope_1            use default
             move.l     d1,4(a1)         set required origin
ope_1        tst.l      d0               error? . .
             bne        ope_2   ---->    . . Yes
             moveq      #sd_wdef,d0      set the window size/origin
             moveq      #0,d1            no . .
             moveq      #0,d2            . . Border
             moveq      #-1,d3           timeout
             bsr        tp3
ope_2        rts

bk           moveq      #sd_fill,d0      to write a block
tp3          trap       #3
             tst.l      d0               error? . .
             beq        tp3_1            . . No
             bra        error1  ---->
tp3_1        rts                         return without errors

wdw1         dc.w       3                length 3
             dc.b       "scr"            string
             ds.w       0                set PC even

wdw          dc.w       128,14,64,100    size/position of window

sze          dc.w       128,14,0,0       size/start of window block
bl           dc.w       120,10,4,2       size/position of marker block
id           ds.l       1                store for ID
asad         dc.l       0                store for address of save area
```

DUCK SHOOTING   Steve Poole

O ne of the very first computer games was transcribed from the simple fairground Duck Shoot. Ducks fly across the sky and you must shoot them down. In fairs, birds fly from left to right or right to left on rails, but I decided to let them cross the sky at any angle, therefore making the flight paths less predictable. Sadly, my ducks are only O's, and my gun 'X', XORed using OVER -1 onto the grid after a brief pause... Move the gun using the arrow keys to hit a duck ...which will kill it.

This appeared to me to be a simple project, but in fact it uses far more code than I imagined. Moreover, my desktop PC having been struck by lightning, I am writing this on a Windows '98 laptop using QPC, which is strangely erratic when the PC goes on standby. Having experienced several spurious anomalies, I failed to detect a logic error in my code, which took me three hours to pin down! Once I had assumed it was my fault, I had it fixed in no time... all it took was inserting INT() around INT(n/2) so that a floating point value derived from a divided odd number would be detected as an integer... and the main loop would terminate. This is the sort of silly mistake you make when you change machines!

There are twelve combinations of initial horizontal, vertical and diagonal angles possible, so I set these up using a select structure. Then the duck flies across the screen, and a shooting loop awaits any key presses from the gun before the bird continues to move. So you can move the gun faster than the bird can fly. This is necessary, as if the duck flies on a diagonal across a corner, you must react very quickly if you hope to prang it. Indeed this random approach means you will rarely shoot all the birds in a game. But it will definitely sharpen up your reflexes.

This game is intended for younger programmers who are interested to see how shoot_em_up games work. Note that as usual, there are no PAUSEs used in the code, as PAUSE operates in #0, and to EXECute economically under SMSQ/E, it is more convenient to use INKEY$(#1): The advantage of this is that you can trap as many key presses as you wish and process them all in one fell swoop, therefore slowing the game as required, to permit smoother graphics handling. This avoids having to resort to machine code to write games.

There are three levels of difficulty : level one is a small slow grid, and level three a faster, larger one. The statement 'a=i+3' avoids cutting

corners too tightly, making the game easier. Reduce the value from '+3' to '+1' if you wish to make the game more hazardous.

If you wish to modify the program, try allowing the ducks to bombard droppings on you, or some suchlike calamity ...a dropping in the eye messing up your aiming for quite some time!

And remember, keep testing any modifications you make as you work, and save partially-constructed code as you go. This takes time, but it is better to check your logic as you proceed, than write the whole lot in one go, only to find you have made a major logic error which is horrendous to pin down. This is the beauty of QL basic : Trial and Error keeps you on track! But do plan out your project in advance by hand...

Happy pop-shotting,

```
100 :
110 REMark Duck_shoot_bas, by S.Poole, v20may2007
120 REMark for QUANTA, Beta-test by B.Coativy.
130 :
140  CLEAR: OPEN#1,con_16
150  WINDOW 512,256,0,0: PAPER 2: INK 1: CLS
160  CSIZE 3,0: OVER 0
170 :
180 AT 1,1: CLS 3: PRINT'Another Game? (y/n)'
190  i$=INKEY$(#1,-1): IF i$=='y': ELSE STOP
200 :
210 AT 1,1: CLS 3
220 PRINT'Difficulty? (1..slow to 3)'
230 i$=INKEY$(#1,-1)
240 IF i$ INSTR '123': ELSE GO TO 220
250 :
260 REMark Duck=dx,dy : Gun=Gx,Gy
270 REMark n=grid_size, ps=pause, last=ducks_per_game
280 REMark a=top or left: z=bottom or right: ct=score
290  CLS: i=i$: n=7*i: ps=18/i: last=i*5
300  up=208: down=216: left=192: right=200
310  a=i+3: z=n-a: ct=0
340 :
400 FOR ducks=1 TO last
405     Draw_Grid
410     Gx=INT(n/2): Gy=Gx
```

```
420     INK 2: OVER -1: get_rnd_duck
430     BEEP 12345,6: i$=INKEY$(#1,10): move_duck
440     INK 4: OVER 0: AT 0,1: PRINT 'Score'!Ct!
450 END FOR ducks
460 :
470 percent=INT((ct*100)/last)
480 CLS: OVER 0: AT 6,1
490 PRINT 'Game Over : Percentage:'!Percent
500 FOR k=1 TO 6: i$=INKEY$(#1,50)
510 RUN
520 ::
530 REMark Now only Routines:
540 ::
550 DEFine PROCedure get_rnd_duck
560  duck_angle=RND(1 TO 12)
570  SELect ON duck_angle
580     =1: dx=1: dy=RND(a TO z): xx=+1: yy=-1
590     =2: dx=1: dy=RND(a TO z): xx=+1: yy=0
600     =3: dx=1: dy=RND(a TO z): xx=+1: yy=+1
610     =4: dx=n: dy=RND(a TO z): xx=-1: yy=-1
620     =5: dx=n: dy=RND(a TO z): xx=-1: yy=0
630     =6: dx=n: dy=RND(a TO z): xx=-1: yy=+1
640     =7: dx=RND(a TO z): dy=n: xx=-1: yy=-1
650     =8: dx=RND(a TO z): dy=n: xx=0 : yy=-1
660     =9: dx=RND(a TO z): dy=n: xx=+1: yy=-1
670    =10: dx=RND(a TO z): dy=1: xx=-1: yy=+1
680    =11: dx=RND(a TO z): dy=1: xx=0 : yy=+1
690   = 12: dx=RND(a TO z): dy=1: xx=+1: yy=+1
700  END SELect
710  AT dy,dx: PRINT 'O': i3$=INKEY$(#1,ps)
720  AT dy,dx: PRINT 'O': i3$=INKEY$(#1,0)
730 END DEFine
740 ::
750 DEFine PROCedure move_duck
760  REPeat moveit
770     dx=dx+xx: dy=dy+yy
780     IF dx>n: EXIT moveit
790     IF dx<1: EXIT moveit
800     IF dy>n: EXIT moveit
810     IF dy<1: EXIT moveit
820     :
825     REMark Pause enough to see the O printed:
```

```
830     AT dy,dx: PRINT 'O': i3$=INKEY$(#1,ps)
850     :
860     FOR f=1 TO 3
870         move_gun_key
880         IF Gx=dx AND Gy=dy THEN
890             ct=ct+1: OVER 0
900             AT 0,1: PRINT 'Score'!Ct!
910             OVER -1: BEEP 12345,67
920             i$=INKEY$(#1,10): RETurn
930         END IF
940     END FOR f
945     AT dy,dx: PRINT 'O': i4$=INKEY$(#1,0)
950  END REPeat moveit
960 END DEFine
970 :
980 DEFine PROCedure move_gun_key
990  i$=i1$&i2$&i3$&i4$
1000  IF i$<>'' THEN
1010     i=CODE(i$)
1020     SELect I
1030         =up   : Gy=Gy-1: IF Gy<1: Gy=1
1040         =down : Gy=Gy+1: IF Gy>n: Gy=n
1050         =left : Gx=Gx-1: IF Gx<1: Gx=1
1060         =right: Gx=Gx+1: IF Gx>n: Gx=n
1070     END SELect
1080  END IF
1085   REMark Pause a while so as to see the X
printed:
1090  AT Gy,Gx: PRINT 'X': i1$=INKEY$(#1,ps)
1100  AT Gy,Gx: PRINT 'X': i2$=INKEY$(#1,0)
1110 END DEFine
1120 :
1330 DEFine PROCedure Draw_Grid
1340  FOR row=1 TO n
1350     FOR col=1 TO n
1360         AT col,row: PRINT '_'
1370     END FOR col
1380  END FOR row
1390 END DEFine
1400 ::
```

SUBGROUP MEETINGS

THE WEST MIDLANDS QL USER GROUP

There has been a change of venue, brought about by the owners of the Queens Head pub changing it from a straight pub into an eatery. The new meeting place is called the Bull, the address is 1 Price Street, Birmingham, B4 6JU. Approx 7 minutes walk from Snow Hill main-line railway station and has ample street parking nearby. Meetings remain open to QUANTA members and non-members alike.

After your first meeting you're expected to pay £1 each time towards the organisation and monthly newsletter costs - except once a year when the group pays all those who attend a pound instead ;-)

We provide food twice a year for those who attend the A.G.M. and the group's birthday party) and at meetings we discuss all sorts of things, QL-related and otherwise, usually from about 8:20pm onwards till 10:30 or later. The group owns QL hardware, a disk library and subscribes to relevant magazines. People can join the mailing list for £3.50 per year, even if they can't attend regularly.

Meetings : Meetings are usually on the first and third Monday of each month (but not on bank holidays unless the previous one was cancelled for that reason).

Contact : The contact number remains Mike Bedford White's, on 0121 605 4438, anytime after 11am.

Email: mikebwhite@blueyonder.co.uk

QUANTA DORSET SUBGROUP

Meetings are held, on the second Sunday of each month at the Merley Community Centre in Harrier Drive, Merley, just south of Wimborne Minster. Time: 2.00 pm. to 5.00 pm. All are welcome.

John Meadows Tel: 01202 576189, or John Mason, 01425 275894.

LONDON QL AND QUANTA GROUP

Meetings are held in the School Room, which is the basement of the Borough Welsh Congregational Chapel, 90, Southwark Bridge Road, London SE1. This is almost opposite the junction with Marshalsea Road, at the other end of which, 5 minutes walk away, is the Borough Underground Station. Free parking is easily available in Southwark Bridge Road for road users, Cyclists are welcome.

Members currently each pay a subscription of £30 per year towards the cost of the hire of the hall and a small additional charge is made for tea/coffee - biscuits are then provided free.

Please bring your QL equipment if possible, all types welcome, e.g., PC portable running emulators. The Group has some systems stored at the venue for its use. In addition, there are lots of donated second user equipment, books, magazines, etc, available for purchase.

Time: 2.00 pm. to 6.00 pm., on the second Sunday of the month.

No meetings are held in either December - winter break, or August summer break. Giving 10 meetings a year.

Malcolm Cadman: Tel: 020 8691 5780

email: QL@mcad.demon.co.uk

NEMQLUG - THE NORTH EAST MANCHESTER QL USER GROUP

Meetings are held at 181, Urmston Lane, Stretford, Manchester. M32 9EH (Near Junction 7 of M60 Motorway - Was Junction 7 M63 Motorway). Our informal meetings start at 7 p.m. and finish at 11 pm. All welcome.

Meets on the last Thursday of each month (except December).

John/Sarah Gilpin 0161-865 2872 (thegilpins@btopenworld.com)

SCOTTISH QL USERS GROUP

S QLUG meets at George Gwilt's home every second Sunday in the month. Please contact George Gwilt before coming to get the location.

Gdgggler@gmail.com

SOLENT SUBGROUP

M eets at Botley Market Hall, all welcome. Park at the back and use side entrance.

2nd Saturday of the month from 2.00 pm to 6.00 pm.

Graham Evans, Tel: 023 8040 3350.

SURREY QUANTA SUBGROUP (SQSG)

The group is currently trying other venues in the Leatherhead - Epsom area. If you plan to attend but do not get our emails, please phone or email Ken Bain for the latest location.

Meetings are 8.00 to 10.00 pm. On the last Wednesday of each month except December.

Ken Bain - 01932 - 347 432 (to midnight), kenb@bcs.org.uk

SUSSEX QL USER GROUP

C urrently without a meeting place, anyone interested should contact Keith Mitchell or Roy Wood.

Roy Wood, 01273 430501 or Keith Mitchell, 01903 742263.